Ecological Resource Consultants, Inc.
5672 Juhls Drive ~ Boulder, CO ~ 80301 ~ (303) 679-4820

November 5, 2014

Care of:
Carol Adams, ASLA, RLA, Principal
StudioTerra, Inc. Landscape Architecture+Land Planning+Urban Design
758 Club Circle
Louisville, Colorado 80027

RE: Tree Inventory – North Boulder Armory, 4750 Broadway Street, Boulder, Colorado 80304

Ecological Resource Consultants, Inc. (ERC) conducted an inventory of existing trees on the North Boulder Armory property located at 4750 Broadway Street, City of Boulder, Colorado (Site) (ERC Project Number 200-1412). The purpose of the inventory was to locate and identify the species of trees present, measure the trunk diameter at breast height (dbh), and evaluate the general health of the trees identified on and near the subject Site. The tree inventory was completed in accordance with Boulder Revised Code (BRC) 9-2-14 (h)(2)(C) "Site Review", BRC 1981; and 9-9-12, "Landscape and Screening Standards" (Ordinance No. 7713).

General Site Description
The Site presently contains several buildings, parking areas, numerous vehicles, and associated armory infrastructure. In addition, the Silver Lake Irrigation Ditch crosses the property diagonally from southwest to northeast. Near the southwest corner of the Site, a lateral ditch leads away from the main Silver Lake ditch towards the south. The property is approximately 8.55-acres in size and is located at an approximate elevation of 5555 feet above mean sea level (msl). The north side of the Site is bound by Lee Hill Drive, the west side is bound by Broadway Street, the east side is bound by 14th Street, and the south side is bound by residential and commercial properties. The south side of the property is separated from the residential and commercial properties by two chain link fences, spaced approximately 10 feet apart, and aligned parallel to one another for the entire length of the property boundary. The central portion of the Site has numerous deciduous trees, primarily growing along the irrigation ditches and adjacent to the buildings. In addition, many ponderosa pine (*Pinus ponderosa*) trees have been planted along the northern and western property boundaries of the Site. The portion of the Site south and east of the main irrigation ditch is moderately sloping to the southeast.

Method
ERC performed the tree inventory on October 3, 2014. Weather was clear and warm, and the trees were producing vegetative and reproductive structures. ERC inventoried, per the BRC, each tree with a diameter of 6 inches and over by identifying the species, measuring the trunk diameter at breast height (dbh) (at approximately 54 inches above the ground) using a 20 foot diameter tape, and evaluating the general condition of each tree. Trees and shrubs with a dbh less than 6 inches were not included in the survey.

All trees inventoried were categorized into one of five groups: excellent, good, fair, poor, or very poor. The tree condition categories are defined as follows:

Excellent
- Healthy, vigorous tree.
- No apparent signs of insect, disease or mechanical injury.
- No corrective work required.
- Form representative of the species.

Good
- Better than average vigor.
- Little corrective work needed.
- Not quite perfect form.

Fair
- Average condition and vigor for the area.
- May be in need of some corrective pruning or repair.
- May lack desirable form characteristics of the species.
- May show minor insect injury, disease, or physiological problem.

Poor
- General state of decline.
- May show severe mechanical, insect or disease damage.
- Death not imminent.
- May require major repair or renovation.

Very Poor
- Includes "poor" above but is more extreme in that no amount of repair or renovation will lead to a desirable and sustainable tree. Costs would exceed any benefit.

Specific tree information is provided in **Table 1**. A Tree Inventory Map (ERC 11/5/14) was prepared on the base mapping provided by the client (ALTA/ACSM Land Title Survey from Flatirons, Inc) and depicts the location of each tree and provides an identification number that corresponds to the tree described in Table 1. Tree species and health were verified by a Boulder licensed Certified Arborist on November 5, 2014.

Summary of Results

Both native and non-native species were identified on the property. Several species of non-native tress are located in the central part of the property and appear to have been planted as part of previous landscaping. There are also a number of deciduous trees which occur along the banks of the Silver Lake Irrigation Ditch and the associated lateral ditch. In addition, there are two trees located within the area bounded by the two parallel chain link fences that occur along the southern Site boundary. Most trees on the property show signs of regular maintenance and were categorized as either excellent or good. The majority of trees identified were ponderosa pines that have been planted along the western and northern property boundaries. Three of the ponderosa pine trees show signs of significant decay and poor health and should be considered for removal. These trees were categorized as very poor.

Report completed by:

Ecological Resource Consultants, Inc.

James Hart
Ecologist

David J. Blauch
V.P., Senior Ecologist

Chris Becker, Certified Arborist (Contractor License # RM-0753A)
Schulhoff Tree and Lawn Care, Inc.
14200 W. 32nd Av
Golden, CO 80401
(303) 279-1910

Table 1. Tree Inventory Results

ID #	Common Name	Scientific Name	DBH (in)	Condition	Comments or Recommendations
1	Eastern Cottonwood	*Populus deltoides*	10.5	Good	-Native species -Some maintenance required
2	Ponderosa Pine	*Pinus ponderosa*	17	Good	-Native species -Some maintenance required
3	Crack Willow	*Salix fragilis*	19.5	Good	-Native species -Some maintenance required
4	Eastern Cottonwood	*Populus deltoides*	20	Good	Native species Some maintenance required
5	Crack Willow	*Salix fragilis*	11.5	Good	-Native species -Some maintenance required
6	Smooth Sumac	*Rhus glabra*	2, 3, 2, 3	Fair	-Non-native species -Species of management concern - Not required to be included in Tree Plan due to size
7	Siberian Elm	*Ulmus pumila*	10, 9	Good	-Non-native species -Species of management concern
8	Siberian Elm	*Ulmus pumila*	12.5, 11	Good	-Non-native species -Species of management concern
9	American Elm	*Ulmus americana*	13.5, 13.5, 13.5	Good	-Non-native species -Species of management concern
10	Green Ash	*Fraxinus pennsylvanica*	6, 6, 6	Good	-Native species -Some maintenance required
11	Siberian Elm	*Ulmus pumila*	15.5, 9, 8, 8	Good	-Non-native species -Species of management concern
12	Green Ash	*Fraxinus pennsylvanica*	9	Good	-Native species -Some maintenance required
13	American Elm	*Ulmus americana*	10, 9	Good	-Non-native species -Species of management concern
14	Eastern Cottonwood	*Populus deltoides*	16	Good	-Native species -Some maintenance required
15	Ponderosa Pine	*Pinus ponderosa*	15.5	Excellent	-Native species -No maintenance required
16	Ponderosa Pine	*Pinus ponderosa*	14.5	Excellent	-Native species -No maintenance required
17	Ponderosa Pine	*Pinus ponderosa*	8	Excellent	-Native species -No maintenance required
18	Ponderosa Pine	*Pinus ponderosa*	8.5	Excellent	-Native species -No maintenance required
19	Ponderosa Pine	*Pinus ponderosa*	10	Excellent	-Native species -No maintenance required
20	Ponderosa Pine	*Pinus ponderosa*	6.5	Excellent	-Native species -No maintenance required

ID #	Common Name	Scientific Name	DBH (in)	Condition	Comments or Recommendations
21	Ponderosa Pine	*Pinus ponderosa*	10	Excellent	-Native species -No maintenance required
22	Ponderosa Pine	*Pinus ponderosa*	12	Excellent	-Native species -No maintenance required
23	Ponderosa Pine	*Pinus ponderosa*	9	Excellent	-Native species -No maintenance required
24	Ponderosa Pine	*Pinus ponderosa*	9	Good	-Native species -Some maintenance required
25	Ponderosa Pine	*Pinus ponderosa*	12.5	Good	-Native species -Some maintenance required
26	Ponderosa Pine	*Pinus ponderosa*	12	Good	-Native species -Some maintenance required
27	Ponderosa Pine	*Pinus ponderosa*	9	Excellent	-Native species -No maintenance required
28	Ponderosa Pine	*Pinus ponderosa*	9	Good	-Native species -Some maintenance required
29	Ponderosa Pine	*Pinus ponderosa*	14	Excellent	-Native species -No maintenance required
30	Ponderosa Pine	*Pinus ponderosa*	5	Good	-Native species -Some maintenance required - Not required to be included in Tree Plan due to size
31	Ponderosa Pine	*Pinus ponderosa*	10.5	Excellent	-Native species -No maintenance required
32	Ponderosa Pine	*Pinus ponderosa*	8.5	Excellent	-Native species -No maintenance required
33	Ponderosa Pine	*Pinus ponderosa*	11	Excellent	-Native species -No maintenance required
34	Ponderosa Pine	*Pinus ponderosa*	9	Excellent	-Native species -No maintenance required
35	Ponderosa Pine	*Pinus ponderosa*	14	Excellent	-Native species -No maintenance required
36	Ponderosa Pine	*Pinus ponderosa*	12.5	Good	-Native species -Some maintenance required
37	Ponderosa Pine	*Pinus ponderosa*	13	Excellent	-Native species -No maintenance required
38	Ponderosa Pine	*Pinus ponderosa*	11.5	Excellent	-Native species -No maintenance required
39	Ponderosa Pine	*Pinus ponderosa*	7	Excellent	-Native species -No maintenance required
40	Ponderosa Pine	*Pinus ponderosa*	11	Excellent	-Native species -No maintenance required

ID #	Common Name	Scientific Name	DBH (in)	Condition	Comments or Recommendations
41	Ponderosa Pine	*Pinus ponderosa*	7.5	Excellent	-Native species -No maintenance required
42	Ponderosa Pine	*Pinus ponderosa*	9	Excellent	-Native species -No maintenance required
43	Ponderosa Pine	*Pinus ponderosa*	5.5	Excellent	-Native species -No maintenance required - Not required to be included in Tree Plan due to size
44	Ponderosa Pine	*Pinus ponderosa*	10	Excellent	-Native species -No maintenance required
45	Ponderosa Pine	*Pinus ponderosa*	7.5	Excellent	-Native species -No maintenance required
46	Ponderosa Pine	*Pinus ponderosa*	9	Excellent	-Native species -No maintenance required
47	Ponderosa Pine	*Pinus ponderosa*	11	Excellent	-Native species -No maintenance required
48	Ponderosa Pine	*Pinus ponderosa*	7.5	Excellent	-Native species -No maintenance required
49	Ponderosa Pine	*Pinus ponderosa*	6	Excellent	-Native species -No maintenance required
50	Ponderosa Pine	*Pinus ponderosa*	11	Excellent	-Native species -No maintenance required
51	Ponderosa Pine	*Pinus ponderosa*	10	Excellent	-Native species -No maintenance required
52	Ponderosa Pine	*Pinus ponderosa*	8	Excellent	-Native species -No maintenance required
53	Ponderosa Pine	*Pinus ponderosa*	10	Excellent	-Native species -No maintenance required
54	Ponderosa Pine	*Pinus ponderosa*	8	Excellent	-Native species -No maintenance required
55	Ponderosa Pine	*Pinus ponderosa*	8	Excellent	-Native species -No maintenance required
56	Ponderosa Pine	*Pinus ponderosa*	6.5	Excellent	-Native species -No maintenance required
57	Ponderosa Pine	*Pinus ponderosa*	8	Excellent	-Native species -No maintenance required
58	Ponderosa Pine	*Pinus ponderosa*	9	Excellent	-Native species -No maintenance required
59	Ponderosa Pine	*Pinus ponderosa*	8	Excellent	-Native species -No maintenance required
60	Ponderosa Pine	*Pinus ponderosa*	8.5	Excellent	-Native species -No maintenance required

ID #	Common Name	Scientific Name	DBH (in)	Condition	Comments or Recommendations
61	Ponderosa Pine	*Pinus ponderosa*	8.5	Excellent	-Native species -No maintenance required
62	Ponderosa Pine	*Pinus ponderosa*	9	Excellent	-Native species -No maintenance required
63	Ponderosa Pine	*Pinus ponderosa*	5.5	Excellent	-Native species -No maintenance required - Not required to be included in Tree Plan due to size
64	Ponderosa Pine	*Pinus ponderosa*	8	Excellent	-Native species -No maintenance required
65	Ponderosa Pine	*Pinus ponderosa*	9.5	Excellent	-Native species -No maintenance required
66	Ponderosa Pine	*Pinus ponderosa*	10	Excellent	-Native species -No maintenance required
67	Ponderosa Pine	*Pinus ponderosa*	8.5	Good	-Native species -No maintenance required
68	Ponderosa Pine	*Pinus ponderosa*	9	Good	-Native species -Some maintenance required
69	Ponderosa Pine	*Pinus ponderosa*	13.5	Excellent	-Native species -No maintenance required
70	Ponderosa Pine	*Pinus ponderosa*	9	Excellent	-Native species -No maintenance required
71	Ponderosa Pine	*Pinus ponderosa*	9	Excellent	-Native species -No maintenance required
72	Ponderosa Pine	*Pinus ponderosa*	10.5	Excellent	-Native species -No maintenance required
73	Ponderosa Pine	*Pinus ponderosa*	10	Excellent	-Native species -No maintenance required
74	Ponderosa Pine	*Pinus ponderosa*	7	Very Poor	- Native species - Likely dead, recommend removal
75	Ponderosa Pine	*Pinus ponderosa*	10	Very Poor	- Native species - Likely dead, recommend removal
76	Ponderosa Pine	*Pinus ponderosa*	10	Fair	-Native species -Some maintenance required -Some dead limbs observed
77	Ponderosa Pine	*Pinus ponderosa*	10	Excellent	-Native species -No maintenance required
78	Ponderosa Pine	*Pinus ponderosa*	14.5	Excellent	-Native species -No maintenance required
79	Ponderosa Pine	*Pinus ponderosa*	9.5	Very Poor	-Native species -Likely dead, recommend removal
80	Ponderosa Pine	*Pinus ponderosa*	12	Excellent	-Native species -No maintenance required

ID #	Common Name	Scientific Name	DBH (in)	Condition	Comments or Recommendations
81	Ponderosa Pine	*Pinus ponderosa*	8.5	Excellent	-Native species -No maintenance required
82	Ponderosa Pine	*Pinus ponderosa*	8.5	Excellent	-Native species -No maintenance required
83	Ponderosa Pine	*Pinus ponderosa*	14	Excellent	-Native species -No maintenance required
84	Ponderosa Pine	*Pinus ponderosa*	9	Excellent	-Native species -No maintenance required
85	Ponderosa Pine	*Pinus ponderosa*	15.5	Excellent	-Native species -No maintenance required
86	Ponderosa Pine	*Pinus ponderosa*	13	Excellent	-Native species -No maintenance required
87	Ponderosa Pine	*Pinus ponderosa*	14.5	Good	-Native species -Some maintenance required
88	Ponderosa Pine	*Pinus ponderosa*	12	Excellent	-Native species -No maintenance required
89	Ponderosa Pine	*Pinus ponderosa*	11	Excellent	-Native species -No maintenance required
90	Siberian Elm	*Ulmus pumila*	2, 3, 3, 2, 3, 2	Excellent	-Non-native species -No maintenance required - Not required to be included in Tree Plan due to size
91	Siberian Elm	*Ulmus pumila*	12	Good	-Non-native species -Some maintenance required
92	Siberian Elm	*Ulmus pumila*	17	Excellent	-Non-native species -No maintenance required
93	Siberian Elm	*Ulmus pumila*	7, 8	Good	-Non-native species -Some maintenance required
94	Two-needle Pinyon	*Pinus edulis*	7, 5, 6	Excellent	-Native species -No maintenance required
95	Hackberry	*Celtis occidentalis*	4, 4, 4, 3, 3	Good	-Non-native species -Some maintenance required - Not required to be included in Tree Plan due to size
96	American Elm	*Ulmus americana*	17	Good	-Non-native species -No maintenance required
97	American Elm	*Ulmus americana*	10, 5	Good	-Non-native species -No maintenance required

*-ID# refers to **Figure 1**: ERC Tree Inventory Map 11/5/2014*
-DBH refers to diameter at breast height measured at 54 inches above ground
-Multiple DBH values indicate tree trunk branching at measured height
-Trees in red text are not required to be included in Tree Plan per City of Boulder regulations due to size.

APPENDIX A – PHOTOGRAPHS

(Refer to Table 1 for notes on tree species, size, and condition)

Photo 1. Looking west down the south property boundary from the SE corner of the property.

Photo 2. Looking north down the east property boundary from the SE corner of the property.

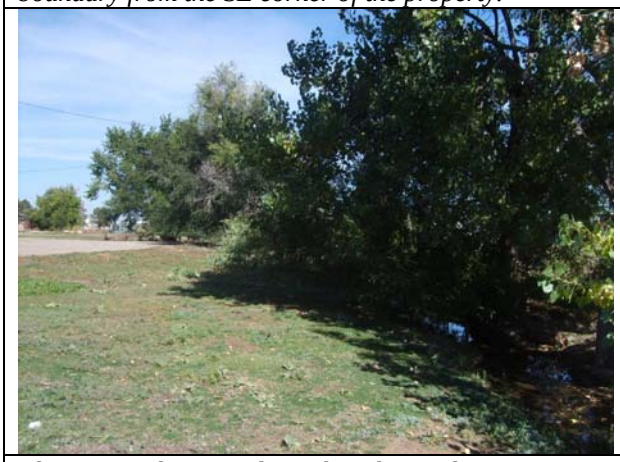


Photo 3. Looking NE down the Silver Lake Irrigation Ditch from near the SW corner of the property.

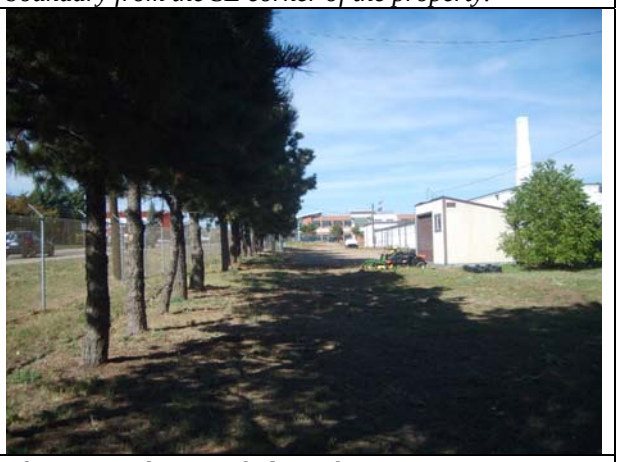


Photo 4. Looking north down the west property boundary from near the SW corner of the property.

Photo 5. Looking east down the north property boundary from near the NW corner of the property.

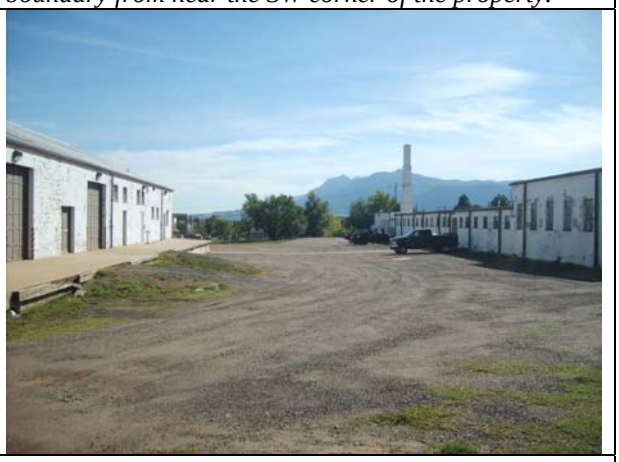
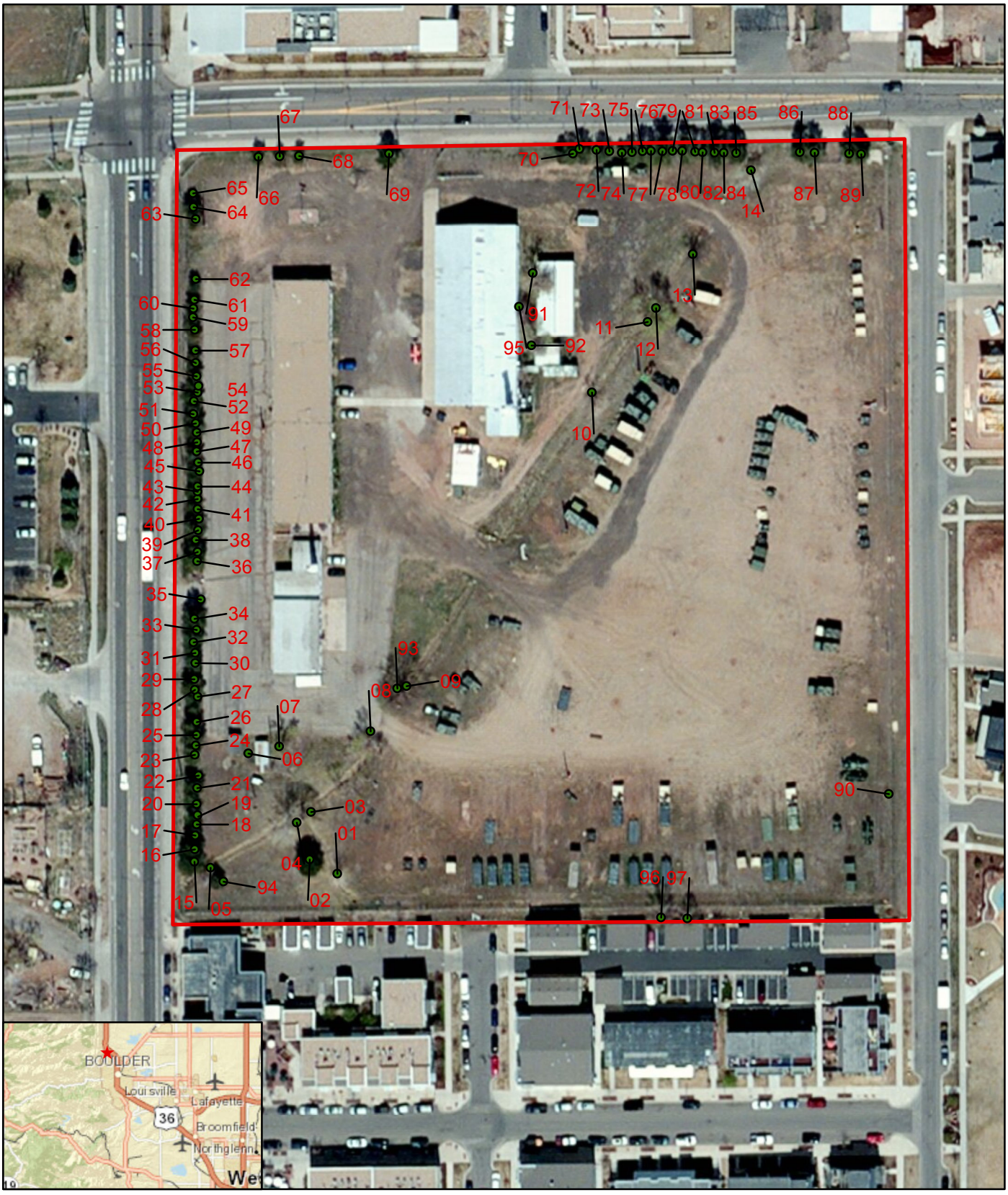


Photo 6. Looking south at the interior portion of the property from the northern property boundary.



Prepared By:

ERC

5672 Juhls Drive
Boulder, CO 80301
(303) 679-4820

ERC #200-1412

FIGURE1
TREE INVENTORY MAP

NORTH BOULDER ARMORY
BOULDER, COLORADO 80304

1 **Tree Location & ID**

Site Location

Site Boundary

Prepared For:
StudioTerra, Inc.
November 5, 2014

Notes:
1. Tree survey conducted by ERC on October 3, 2014.
2. Refer to Table 1 for Tree ID, species, and description